not exceed 5 milligrams for an air-purifying respirator, 28 milligrams for a powered air-purifying respirator with tight-fitting facepiece, and 41 milligrams for a powered air-purifying respirator with loose-fitting hood or helmet.

(e) *Enamel mist test.* (1) Temperature in the test chamber will be approximately 25 °C.

(2) Continuous airflow through the respirator will be 32 liters per minute for air-purifying respirators, and not less than 115 liters per minute to tight-fitting facepieces and 170 liters per minute to loose-fitting hoods and helmets of powered air-purifying respirators.

(3) Airflow through the chamber will be 20–25 air changes per minute.

(4) The atomizer employed will be a No. 64 nozzle with setup 1A, or equivalent, operating at 69 kN/m.^{2} (10 pounds per square inch gage).

(5) The test aerosol will be prepared by atomizing a mixture of 1 volume of white enamel and 1 volume of turpentine. The enamel described in Federal Specification TT-E–489b, May 12, 1953, with amendment-1 of 9 November 1955 is an example of an acceptable enamel. Copies of TT-E–489b may be inspected or obtained from the NIOSH, Certification and Quality Assurance Branch, 1095 Willowdale Road, Morgantown, WV 26505–2888.

(6) The concentration of pigment in the test aerosol, weighed as ash, will be 95–125 milligrams per cubic meter.

(7) The test aerosol will be drawn to each respirator for a total of 156 minutes for air-purifying respirators and 240 minutes for power air-purifying respirators.

(8) The total amount of unretained mist in the samples taken during testing, weighed as ash, shall not exceed 1.5 milligrams for any air-purifying respirator, 8.3 milligrams for a powered air-purifying respirator with tight-fitting facepiece, and 12.3 milligrams for a powered air-purifying respirator with loose-fitting hood or helmet.

(f) *Bench tests; gas and vapor tests.* (1) Bench tests will be made in accordance with § 84.207 and tested cartridges shall meet the minimum requirements set forth in Table 11 of subpart L of this part. Cartridges will be equilibrated in accordance with paragraph (f)(2) of this section.

(2)(i) Two powered air-purifying cartridges or pairs of cartridges will be equilibrated at room temperature by passing 25 percent relative humidity air through them at the following flow rates (expressed in liters per minute (l.p.m.)) for 6 hours:

Type of cartridge	Airflow rate, l.p.m.
Powered air purifying with tight-fitting facepiece	115
Powered air purifying with loose-fitting hood or helmet	170

(ii) Two powered air-purifying cartridges or pairs of cartridges will be equilibrated by passing 85 percent relative humidity air through them at the flow rates stated in paragraph (f)(2)(i) of this section.

(iii) All cartridges will be resealed, kept in an upright position, at room temperatures, and tested within 18 hours.

§ 84.1158 Dust, fume, and mist tests; respirators with filters; minimum requirements; general.

(a) Three respirators with cartridges containing, or having attached to them, filters for protection against dusts, fumes, and mists, except the mists of paints, lacquers, and enamels, will be tested in accordance with the provisions of § 84.1157(f).

(b) In addition to the test requirements set forth in paragraph (a) of this section, three such respirators will be tested, as appropriate, in accordance with the provisions of §§ 84.1141 through 84.1152; however, the maximum allowable resistance of complete dust, fume, and mist, and gas, vapor, or gas and vapor chemical cartridge respirators shall not exceed the maximum allowable limits set forth in § 84.1157(a)(2).

TABLES TO SUBPART KK OF PART 84

TABLE 12—FACEPIECE TEST REQUIREMENTS

[42 CFR Part 84, Subpart KK]

Respirator types	Pressure tightness test [1]	Isoamyl acetate test	
		84.1141	84.1142
Dusts: Air Contamination Level not less than 0.05 mg/M^3 or 2 mppcf	X		
Fumes: Air Contamination Level not less than 0.05 mg/M^3	X	X	
Mists: Air Contamination Level not less than 0.05 mg/M^3 or 2 mppcf	X		
Dusts, Fumes, and Mists: Air Contamination Level less than 0.05 mg/M^3 or 2 mppcf, and radionuclides	X		X
Radon daughters	X	X	
Asbestos-containing dusts and mists	X		

[1] Test is required only where applicable.

TABLE 13—AIR-PURIFYING AND POWERED AIR-PURIFYING RESPIRATOR FILTER TESTS REQUIRED FOR APPROVAL

[42 CFR Part 84, Subpart KK]

Respirator types	Silica dust tests			Lead fume test 84.1146	Silica mist test 84.1147	DOP test 84.1151
	84.1144	84.1145	84.1152			
Dusts: Air Contamination Level not less than 0.05 mg/M^3 or 2 mppcf	X					
Fumes: Air Contamination Level not less than 0.05 mg/M^3				X		
Mists: Air Contamination Level not less than 0.05 mg/M^3 or 2 mppcf					X	
Dusts, Fumes, and Mists: Air Contamination Level less than 0.05 mg/M^3 or 2 mppcf, and radionuclides			X			X
Radon daughters	[1] X				[2] X	
Asbestos-containing dusts and mists	[2] X				[3] X	
Single use dust and mist respirators		[3] X			[3] X	

[1] For resistance only.
[2] For penetration only.
[3] Test required only where applicable.

TABLE 14—CARBON TETRACHLORIDE BENCH TESTS AND REQUIREMENTS FOR CANISTERS AND CARTRIDGES

[42 CFR part 84, Subpart KK]

Type of pesticide respirator	Test concentration p.p.m. CCl_4	Flow rate l.p.m.	Number of tests	Minimum life minutes [1]
Chest-mounted or back-mounted gas mask (as received)	20,000	64	3	12
Chest-mounted or back-mounted gas mask (equilibrated)	20,000	32	4	12
Chin-style gas mask (as received)	5,000	64	3	12
Chin-style gas mask (equilibrated)	5,000	32	4	12
Chemical Cartridge respirator (as received)	1,000	64	3	50
Chemical cartridge respirator (equilibrated)	1,000	32	4	50
Powered air-purifying respirator (tight-fitting facepiece, as received)	1,000	[2] 115	3	50
Powered air-purifying respirator (tight-fitting facepiece, equilibrated)	1,000	[2] 115	4	25
Powered air-purifying respirator (loose-fitting hood or helmet, as received)	1,000	[3] 170	3	50
Powered air-purifying respirator (loose-fitting hood or helmet, equilibrated)	1,000	[3] 170	4	25

[1] Minimum life will be determined at 5 p.p.m. leakage.
[2] The flow rate shall be the effective flow rate of the device, but shall be not less than 115 l.p.m.
[3] The flow rate shall be the effective flow rate of the device, but shall be not less than 170 l.p.m.